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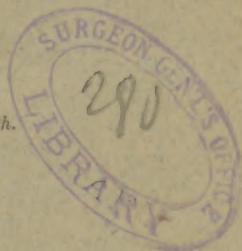
THE CLIMATOLOGY

AND

DISEASES OF SOUTHERN CALIFORNIA.

BY

Compliments of H. S. ORME, M.D.,
President State Board of Health.



Reprinted from the Ninth Biennial Report of the State Board of Health.



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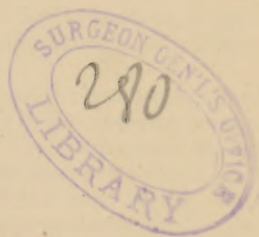
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TOPOGRAPHY.

The territory to which this inquiry is restricted embraces the Counties of Santa Barbara, Ventura, Los Angeles, San Bernardino, and San Diego.

It comprises an irregular outline extending about from latitude $32^{\circ} 30'$ to $35^{\circ} 40'$ and from longitude 37° to $43^{\circ} 40'$. In the direction of the parallels its extreme width is three hundred and thirty miles, and its extreme length two hundred and thirty miles. Its coast line, following the indentations, measures about three hundred and thirty miles.

Four of the five counties have a wide exposure to the sea; and but one of the five, viz.: San Bernardino, is entirely inland. Two thirds of the coast line of Santa Barbara County, and about one half of that of Los Angeles County, presents a southerly exposure. The remaining portion of the entire coast line faces westerly or southwesterly. Between the most easterly point on the coast and the most westerly there is a distance of two hundred and fifteen miles.

The western part of this region is traversed by low ranges of mountains, having an average altitude of from three thousand five hundred to six thousand feet. A few of the higher peaks exceed seven thousand feet in altitude; the culminating peak, Mount San Bernardino, reaches to a height of eleven thousand eight hundred feet above the sea level. These mountain ranges inclose a number of small but fertile valleys, a few of which are settled. All of them are capable of supporting a population of moderate density.

The eastern portion consists of an arid and tolerable level tract, usually called the Mohave Desert. A small portion of this in the extreme southern part of the State is known as the Colorado Desert. It is separated from the former by a few isolated ridges which form the southern remnant of the San Bernardino Mountains. The western part of this arid region has an altitude of two thousand feet, the central and eastern parts are much lower, and in several places are below the sea level. Two of these depressions, Death Valley, and the sink of the San Felipe River, are about four hundred feet below the sea.

The lowest point on the Southern Pacific Railroad through the Colorado Desert is twenty-six miles east of Indio, or five miles west of Dos Palmas; this is two hundred and sixty-six feet below the sea level. From this point the ground falls off south, until reaching a point half a mile distant, the level bottom of the desert in the form of a salt bed is found; this is two hundred and eighty feet below the sea. This is where the "New Liverpool" salt company are operating, and have their works.

But by far the most important part of Southern California is the western slope of the Coast Range of mountains, which, from a narrow strip in the north, widens to a broad plain in the south.

Its area is materially increased also by the valleys of numerous short rivers which traverse the mountain ranges, and flow towards the ocean. This region is possessed of wonderful fertility, and is capable of supporting a denser population than any other part of California. The conditions of soil and climate are such, that it will produce almost any crop that can be grown between the latitudes of Lake Manitoba and Key West.

It is this region which we shall chiefly consider in speaking of Southern California. Its hoard of grain already contributes to feed the overcrowded population of London; its preserved fruits are sold in the cities of Southern Italy.

SOIL.

There are many varieties of soil to be found in the southern counties of California. These in their bearing upon the climate of the region may be classified with respect to their retentiveness of moisture. The non-retentive soil includes the red and blue clays, of which there are but little, and the well known *adobe*. The latter is more or less abundant, occurring in irregular patches from a few acres to several square miles in extent.

The retentive soils comprise the gravelly loams, the micaceous sediments, and the so called sand bottoms along the river courses. This classification may seem at first paradoxical, but facts are stronger than theory, for while the wet and boggy clay and *adobe* bakes under a semi-tropical sun into a friable and *perfectly dry mass*, the sands and more porous soils are *moist* throughout the year. This peculiarity, which is due to capillarity, is not only an important element in insuring great productivity to the soil, but it also exerts a decided effect in moderating the severity of the Summer's heat. The soil of the eastern part, or the arid region, and also the detritus brought down by the rivers during the Winter floods, is commonly called "sand." Of true sand, however, there is not a particle, excepting along the coast. The alleged "sand" is nothing more than disintegrated granite rock, rich in feldspar, and containing a notable quantity of mineral phosphates.

This is the secret of the wonderful productiveness of the soil wherever watered; it is also a most important factor in determining the fine quality of the fruit and vintage, for which Southern California has already a world-wide reputation.

HUMIDITY.

Under this head we will consider the annual rainfall, and independently the amount of moisture present in the atmosphere. A knowledge of the total rainfall of a region gives but little insight as to its climatic conditions; the distribution of the rainfall reveals much. In Southern California, as on the Pacific Coast generally, the rainfall occurs almost wholly during the Winter months. A few scattering showers occur in November and December; heavier rains fall during the following three months, especially during February and March. There are occasional rains in April, and rarely in May. In the mountains, however, there are at times heavy mists, and even dashes of rain.

The average rainfall of the southern part of the State may be seen from the following table. Of the five stations mentioned, Santa Barbara and San Diego are on the coast; Los Angeles is about seventeen miles inland. San Bernardino, about sixty miles inland. Yuma is situated in the heart of the arid basin region, the town is just over the line in Arizona (old Fort Yuma is in California).

| STATION. | Average Rainfall in inches. |
|----------------------|-----------------------------------|
| Santa Barbara | 15.8 |
| Los Angeles | 17.6 |
| San Diego | 10.6 |
| San Bernardino | 15.9 |
| Yuma | 2.3 |

In general the rainfall of the western part of Southern California is sufficient to produce as much as the soil will stand without "wearing out." This on the average will hold good six years in seven. In the eastern region, wherever water can be obtained for irrigation, vegetation grows with wonderful luxuriance, as may be seen in the case of the railway station at Indio, in the Colorado Desert. Without artificial irrigation, scarcely anything beyond a few species of cactus and agave will grow.

From the preceding it will be seen that the habitable portions of Southern California receive but a trifle less of rain than the lower Sacramento Valley, and considerably more than the San Joaquin Valley.*

A more important factor than the rainfall, is the relative humidity of the air. This is a matter somewhat difficult to present, as the atmosphere may be extremely "moist" one day, and very "dry" on another, and yet in both cases contain exactly the same amount of aqueous vapor. The cause, it is hardly necessary to state, is due to a difference in temperature. In the one case the air, because of its low temperature, contains nearly or quite all the vapor it can possibly hold. In the second case, while the air may contain the same amount or even more of moisture, the air seems dry, because its high temperature enables it to hold three or four times as much vapor as it appears to contain. In Southern California the seasons of dry air and moist air are well marked. Aside from these there are belts of country especially liable to heavy fogs.

From the time of the first rains, the belt of country next the coast is bathed in an atmosphere which is tolerably moist. At a distance of a few miles inland the relative humidity increases—not because there is more moisture but because the temperature is apt to range lower. Here the fogs are heaviest and the deposition of dew is greatest. Beyond this belt as the distance from the coast increases, the relative humidity decreases, until, at the crest which separates the Pacific Slope from the Great Basin, the air throughout the year is dry, pure, and invigorating. During the Summer months the relative humidity is much less than in Winter. The deposition of dew ceases altogether, and the atmosphere becomes very dry. There is no decomposition of organic matter, because there are no Summer rains. As a result, the atmosphere is so pure and free from organic germs, that meat exposed to the air cures or "jerks," but does not putrify. In the Colorado Desert, and even in the high mesa lands west of the divide, culture fluids, such as are used in cultivating bacteria, if properly sterilized, often evaporate without "breaking down." It must be borne in mind, however, that this condition, although a prevalent one, is by no means universal. There are many days during the rainy season when the atmosphere is damp, chilly, and depressing. There may also be occasional localities where on account of excessive irrigation and imperfect drainage, etc., the atmosphere is liable to be unwholesome, and malarial diseases might prevail. Damp and chilly days, however, are rare even in Winter,

* Sacramento, 19.7 inches; Stockton, 16.7 inches; Visalia, 9 inches.

and the few localities (which are not properly drained) where malaria might prevail can be readily avoided.

WINDS.

The prevailing winds of this region are generally called "trade winds." This name may answer for want of a better one, but, as a matter of fact, the upper and prevailing currents of air have more the nature of monsoons than of trade winds. During the Winter months the prevailing winds are from the south and southwest; during the Summer months, from the north and northwest. As a general thing, local winds assert themselves all over this part of the State, and, in fact, throughout the Pacific Coast. Thus along the coast the land and sea breezes are nearly always to be found. They are very noticeable at Santa Barbara, Santa Monica, and San Pedro, perhaps less so at San Diego. During very hot days in the interior, a stiff sea breeze all along the coast blows inland to replace the rising current of hot air. As a result, there is not only cool weather along the coast, but the temperature of the inland belt is considerably modified. This is shown in comparing the temperature of the region west of the great divide with that east of it. In the former the temperature rarely reaches 90° Fahrenheit, while in the latter it frequently ranges from 115° to 125° for days at a time.

Another health-giving, but extremely disagreeable wind, is the "Santa Ana," or "norther." This is a hot and very dry wind, usually confined to limited localities a few miles inland, but occasionally sweeping over a broad belt of country. During the progress of this wind the air is highly electrified. Horses' tails stand out like thick bushes, the hair of the head crackles sharply when rubbed with the hand, and metallic bodies resting on an insulating material, such as dry wood, discharge themselves with visible sparks when a conductor is brought near. In one instance, it is said, the telegraph line between Los Angeles and Tucson, some four hundred and fifty miles in length, was detached from the battery and operated by the earth currents alone. After the clearing away of one of these wind storms, the atmosphere becomes wonderfully clear, pure, and invigorating.

In general, the direction of the local winds of the interior is governed, to a great extent, by the direction of the mountain ranges and the various passes. Thus the "Santa Ana" wind receives its name, because it frequently issues from the Santa Ana Pass.

TEMPERATURE.

The mild and genial temperature to which Southern California owes its celebrity is due to two causes—low latitude and ocean winds. Lying in the latitude of South Carolina and Georgia, warmth would necessarily result from the nearly vertical rays of the sun. But while the latter States are swept chiefly by land-winds, the former is perpetually swathed in winds that have been warmed by tropical waters. The climate has, therefore, the features of an ocean climate; that of the coast region is typically oceanic, and this is the secret of its uniformity. It is hardly necessary to state that the temperature is most uniform along the coast, and that the daily range increases as one travels from the coast towards the interior.

As an instance of the mildness of the coast climate the average of the twelve hottest and twelve coldest days at Santa Barbara are respectively 81° and 62°. The highest reading for this year, which is taken at random, is 92°; the lowest 42°. The result would have been materially the same if San Diego, Long Beach, or Santa Monica had been taken as an example.

The following table shows the mean temperature of the principal localities of Southern California for a period covering four years. There would have been no material difference had the period been extended to ten years:

| STATION. | Mean Temp., June, July, and August. | Mean Temp., Dec., Jan., and Feb. |
|---------------------|---|--|
| Santa Barbara..... | 74.2 | 57.6 |
| Los Angeles..... | 66.1 | 50.0 |
| San Diego..... | 66.3 | 53.1 |
| San Bernardino..... | 69.0 | 49.0 |
| Yuma..... | 87.1 | 54.8 |

At Los Angeles, during the year 1880, the thermometer rose as high as 90° only fourteen times, while at San Diego this temperature was recorded only six times.

East of the divide which separates the Great Basin from the Pacific Slope, the heat of Summer becomes exceedingly fierce. A temperature of 135° has been recorded in the Colorado Desert, and one of 120° is by no means uncommon. At Yuma, during the year 1880, there were one hundred and eighteen days in which the temperature exceeded 100°, and twenty-eight days in which it exceeded 110°. At Indio and Dos Palmas, two stations on the Southern Pacific Railroad, the heat has been even more severe.

It is worthy of remark, however, that in this region, such high temperature is by no means intolerable. Because of the dryness of the atmosphere, there is no greater discomfort with the thermometer at 120°, than in New York or in Chicago at 95°. Sunstroke is almost unknown, and people who live in this locality remain out of doors unconcerned, the thermometer meanwhile indicating a temperature which, in a region of Summer rains, would almost depopulate it by sunstroke.

In the western part of Southern California, frosts are rare, and are confined to the river bottoms, and the high mountain altitudes. There are extensive belts of land where they never occur. Tropical fruits and exotic plants may suffer from drought, but not from cold.

It is also worthy of remark that, although the Summer days may be unpleasantly warm, the nights are invariably cool. Flannel may and should always be worn next the skin throughout the year, and there are not half a dozen days in the year when light woolen outer garments are uncomfortable.

DISEASES.

In order to obtain reliable data on which to base a satisfactory report upon the prevalent diseases of this section, a circular letter was directed to numerous reputable resident practitioners, asking for information on this point limited to the years 1884 and 1885. Of those addressed fifty-one responded in detail.

To make the individual reports complete very many personal communications were necessitated, the resulting correspondence becoming quite voluminous. I desire here officially, as I have privately by letter, to express my gratitude to the many busy physicians who so fully responded to my inquiries, and thus made this report possible. Especially am I indebted to Dr. F. A. Seymour of Los Angeles for valuable counsel and assistance.

After repeated careful examination and comparison of these replies, it

has seemed best to present a condensed tabulated summary, in which the relative frequency of the several diseases reported shall be expressed by words instead of numbers. The following reasons among others have led to this decision: First, the fact that most of the reporters have quoted from memory. Second, a numerical report to be of value must include a memorandum of the total population among whom the reporter has practiced, and his total number of cases of all kinds, in the period named as well. Without these figures for purposes of comparison a numerical statement must be misleading. Third, the words here employed to describe the results of professional observation are such as must convey to the general reader a more satisfactory idea of the facts than ever figures could do.

Inasmuch as certain reporters may notice that the tabulated statement varies somewhat from their reports, it is but right that the rules should be stated upon which the final summary was based:

First—Where there was but one report from any locality, the facts were recorded without change.

Second—Where from any locality some reported a disease frequent, and others absent, in the table it will be found *occasional*.

Third—When some reported rare, and others occasional, *occasional* was adopted.

Fourth—Where some reported rare, and others absent, *very rare* is used.

Fifth—Where some reported occasional, and others absent, *rare* is employed.

These rules have been departed from to the least possible degree, and only where a wide discrepancy has been noticeable between the report of an old resident practitioner and of a comparatively recent arrival. Before giving the table it may not be amiss to present concisely a few topographical facts pertaining to the several localities reported, and in the order in which they appear.

SANTA BARBARA.—On the coast. Exposure, southerly. Sheltered by mountains to northward.

SANTA MARIA.—Thirteen miles inland. Elevation, about three hundred feet. Surrounded by mountains, but not sheltered from trade winds. Prevailing winds west and northwest.

LOS ALAMOS.—Thirty-five miles inland. Elevation, five hundred feet. Sheltered by mountains; but the valley runs into other valleys which open out to the ocean. Prevailing wind northwest.

SAN BUENAVENTURA.—On the coast. Exposure, southwesterly.

NORDHOFF.—About fifteen miles inland. Elevation, about fifteen hundred feet. An upland valley (Ojai), surrounded by mountains, sheltered from ocean winds and fogs.

SANTA MONICA.—On the coast. Exposure, southwesterly. Sheltered by a low range of mountains to northward.

WILMINGTON AND SAN PEDRO.—On the bay. Southerly and easterly exposure. Sheltered somewhat from westerly winds by the peninsula.

COMPTON.—Twelve miles inland. Elevation, about eighty feet. In the artesian belt of wet lands. Sheltered by a low range of hills on the northwest and south. Exposed to westerly winds.

DOWNEY.—Fourteen miles inland, on the San Gabriel River. Elevation, about one hundred and twelve feet. Exposed to westerly winds.

FULTON WELLS (or IRON SULPHUR SPRINGS, a health resort).—About fourteen miles inland. Elevation, about one hundred and fifty feet. On the eastern margin of the artesian belt, on a mesa approaching a low range of hills to the eastward. Winds from the southwest, never heavy.

ANAHEIM.—Twelve miles inland. Elevation, one hundred and thirty-three

feet. On the south bank of the Santa Ana River. Sheltered on the north and east by a low range of hills and exposed to the ocean breeze on the south and west.

SANTA ANA.—Ten miles inland. Elevation, about one hundred and forty feet. In an open valley. Sheltered on the north and east by a low range of hills. Exposed to mild ocean winds from the south and west.

ORANGE.—Twelve miles inland. Elevation, about one hundred and forty feet. In an open valley, sheltered on the north and east by the Santiago Mountains, and exposed to mild ocean winds from the south and west.

POMONA.—About thirty miles inland. Elevation, about eight hundred and fifty-five feet. In the San José Valley. Sheltered on the west by the San José hills and on the north by the Sierra Madre Mountains. An open plain to the east. Prevailing winds from the south and west: never harsh.

AZUSA.—Thirty-five miles from the coast. Elevation, about five hundred feet. An agricultural settlement near the foot-slope of the Sierra Madre Mountains. Exposed to mild southwest winds.

PASADENA.—About twenty-eight miles inland. Elevation, about one thousand feet. On the foot-slope of the Sierra Madre Mountains. Sheltered on the west by a low range of hills, on the north by the Sierra Madre, and exposed on the south and west to a temperate ocean breeze.

SAN FERNANDO.—Twenty-five miles inland. Elevation, one thousand and sixty-seven feet. A large open valley, sheltered on the south and west by a low range of hills, on the north by the Sierra Madre Mountains. Prevailing winds from the south.

NEWHALL.—About thirty-five miles inland. Elevation, twelve hundred feet. On the north slope of the Sierra Madre Mountains, at the head of the Santa Clara Valley, surrounded by mountains on the south, west, and east. Prevailing wind from the southeast. Oil region.

LOS ANGELES.—Seventeen miles inland. Elevation, from two hundred and fifty to four hundred and fifty feet. Open approach from the ocean from the south and west. Sheltered on the north by the foothills of the Coast Range, and on the east by the Sierra Madre Mountains. Prevailing winds from the south and west.

SAN BERNARDINO.—About sixty miles inland. Elevation, one thousand and seventy-three feet. Surrounded on the north and east by the San Bernardino Mountains, on the south by the San Jacinto and Temecula Mountains. Artesian section. Exposure to westerly winds.

COLTON.—About fifty-five miles inland. Elevation, nine hundred and seventy-two feet. Surroundings practically the same as those of San Bernardino, which is but four miles distant.

RIVERSIDE.—About fifty miles inland. Elevation, nine hundred and fifty-five feet. On the south bank of the Santa Ana River. Exposed to the same winds as San Bernardino and Colton, and to the winds from the Cajon Pass and Santa Ana Cañon.

CALICO.—One hundred and twenty miles inland. Elevation, twenty-two hundred feet. On the north side of the Sierra Madre Mountains, and surrounded on the north and west by a low range of mountains. In the Mojave Desert. Prevailing winds from the north and west.

SAN DIEGO.—On the main shore of a land-locked bay. Sheltered from heavy trade winds, and exposed only to moderate winds from the west.

NATIONAL CITY.—Similarly situated and but four miles distant from San Diego.

VALLEY CENTER.—About twenty miles from the coast, in a small inland valley (Bear Valley). Elevation, about two hundred feet.

While the table speaks for itself, it is possible to add to its practical usefulness by special comments and an occasional quotation from the remarks of some of the reporters.

It will be observed that rheumatism is reported as frequent in but three localities, and those are noted for their westerly exposure and damp sea breezes. Santa Maria and Los Angeles are the only points where the acute form is especially noted. Dr. R. W. Hill, San Buenaventura, reports "rheumatism common, due to exposure, irregular mode of life, and exhausted vitality."

In analyzing the various reports presented, it was found that quite a good many included by especial reference the muscular variety or myalgia. This distinction is important. For while acute rheumatism is of rare occurrence, myalgia is to be noted at almost every point below the fog line nearly every month in the year, but more frequently during the rainy season. Neuralgias of the head are less frequent than myalgia, while sciatica is still less frequent than the former.

Of the malarial affections, so essentially dependent upon local causes—intermittent and remittent fevers—are reported as frequent in but a single locality, the mining town of Calico; while in the majority of the twenty-seven places reported, they are entirely unknown, or very rare.

In regard to typho-malarial fever, there obtains the same difference of opinion here as to its entity, as in the East. Some reporters deny its existence, while others of equal experience from the same localities report its presence. With the almost total absence of strictly malarial fevers, it seems hardly reasonable that malarial complications should be found associated with typhoid symptoms. And yet, my personal observation confirms the reports from several points, that occasionally there is to be encountered a fever as distinctively typho-malarial as that seen in camp during the late war, and so designated by Surgeon J. J. Woodward, U. S. A.

It is proper to remark in this connection, that a difference of opinion has been noted as to the presence and prevalence of typhoid fever. The view held by a majority of the reporters is, that the disease is seldom or never seen in this region. It is reported frequent in but two localities, viz.: Compton and Calico; points remote from each other, and of widely different climatic peculiarities.

Dr. F. S. Whaley, the reporter from Compton, and for many years a resident of this State says: "Typhoid fever is the endemic fever of this section, and of the principal part of the State, according to my observation."

Dr. J. A. Crane of Santa Ana, writes: "A few well-marked cases of typhoid occur each year in our valley. A simple continued fever, bearing some general resemblance to typhoid, *but lacking the more essential features*, occurs rather more frequently. It is usually called typhoid for the lack of a better name. This form is rather more prevalent during the Autumn months."

Dr. C. M. Fenn of San Diego, says: "We have sporadic cases of *California typhoid, i. e.*, without the intestinal lesion."

It is noteworthy that San Diego and Santa Ana both report typho-malarial fever rare.

But two reporters trace their cases to specific origin. Dr. W. T. Lucas, of Santa Maria, says: "We have a sporadic case of typhoid now and then. We experienced a local epidemic in November and December, 1885, traceable to an old well of water that had been neglected until the owners could use it no longer. A new well was dug, but too late to prevent those using the water from being infected." Dr. O. H. Congar, of Pasadena, reports: "I have seen only four cases within the past eight years—

due to open ditch water being contaminated by hog wallowing, cattle excrement, etc."

It might be supposed that intestinal affections would prevail throughout this section by reason of the probable indiscreet use of fruit, but such is not the case. Diarrhoea is reported frequent at San Pedro, probably among the sailors, and at Calico among the miners. Dysentery is reported frequent at Calico, doubtless because of the insanitation incident to mining communities. The only other point where it is reported frequent is at Azusa, otherwise one of the most healthful sections of the State. In regard to this, Dr. Samuel McCurdy writes: "Dysentery is frequent during April, May, and June, or during the irrigating season. But we have very little sickness of any kind here. Like all Southern California, it is very healthy. The great danger to health is our open ditches when decayed vegetation is allowed to remain, and the water infected, though sparkling and bright, finds its way into our cisterns."

The only deleterious effects resulting from fruit are reported under the head of infantile convulsions. This form of trouble, so common east of the mountains, and intimately associated with dentition, is a rare affection here. Several reporters record cases of it, due to the ingestion of *unripe* oranges.

Respiratory affections, which in some form or other constitute the most powerful incentive to immigration to this section of the Pacific Coast, have demanded no little care in this report, and have been quite faithfully considered by the reporters. There has been a misunderstanding on the part of many as to the differential diagnosis between influenza and catarrhal fever. By the former is meant inflammation of the upper air passages, or common cold in the head; by the latter, superficial congestion of the lower air passages, stopping short of bronchitis, yet accompanied by cough, sometimes by a frothy mucus or slightly muco-purulent expectoration, and some elevation of temperature. Here, as elsewhere, these disturbances may exist separately or conjointly; and while occurring most frequently during the rainy season, they may prevail in a slightly epidemic form apparently independent of the weather. Reporters generally indicate the mildness of these cases, and the fact that they seldom demand medical treatment. It is noticeable that one or both of these affections constitute no inconsiderable part of the process of acclimatization, which nearly all newcomers must undergo.

It is also worthy of remark that persistent negligence of care and proper treatment during these attacks, when severe, frequently results in the establishment of nasal or naso-pharyngeal catarrh. This is more particularly true of persons residing on damp lands, or in localities exposed to the raw westerly sea breeze. Newcomers require to be constantly reminded that while this region has been designated semi-tropical, the marked diurnal range of temperature does not seem to entitle it to the name; but that by reason of the lowest degree registered daily by the mercury, this is a cool rather than a warm country. And, inasmuch as the cutaneous surface adjusts itself more readily to unusual elevations of temperature than to corresponding depressions, it is very essential that the residents of this region, as previously noted, wear woolen garments next to the skin all the year, and thus provide against the exigencies of the coldest period of the twenty-four hours. The weight of the woolen may be varied as between the wet and dry season, but it is really safer to make the change in the weight of the outer garments.

Croup and laryngismus are of infrequent occurrence.

Bronchitis is reported frequent only at the seaport of San Pedro.

Pneumonia, the scourge of the nation, east of the mountains, from the icy regions of the North to the semi-torrid regions of the extreme South, is almost a stranger here. Whether our soil and climate are uncongenial to the pneumo-coccus, or whether that enterprising microbe has his time wholly occupied as yet in the more densely populated sections eastward, remains for the present unknown. An occasional case of lobular pneumonitis is reported, but the lobar variety is rare.

Asthma, whether of the bronchial or cardiac variety, seldom originates in this section. Many cases come here for relief, and demonstrate the obstinate and as yet incomprehensible eccentricities of the affection. All of them do well; indeed, all of them recover, if willing to submit to the tyranny of the climate-hungry neurosis. Relief is not to be found in any one locality for all cases. Probably Nordhoff and Colton afford the environments demanded in the majority of instances.

Hay fever, the asthma of many aliases, has never been known to originate here. The nearest approach to it is in two cases of conjunctivitis from rose pollen, reported in persons who in the East were victims of rose-cold. As a rule, persons who have suffered an annual visitation from this miserable affection, at any point east of the mountains, enjoy complete immunity from invasion in Southern California.

The reports on pulmonary phthisis have been very full and candid. The mortuary records, whenever accessible, show a greater percentage of deaths from this cause than from any other. But it is also true that the vast majority of these deaths occur among persons who have come here already infected, in hope of restoration. Very few of them have resided here so long as one year.

Dr. C. B. Bates of Santa Barbara, writes: "This being a health resort, we have many cases of tubercular disease amongst our visitors. These diseases are rare, however, among the native white population, but common with the Spanish portion of the residents. This latter fact I ascribe:

"*First*—To close intermarriage through a long series of years.

"*Second*—To change of habits since the coming of the Americans (Anglo-Americans), they live more in their adobe houses, not so much out of doors as formerly, and poorer, perhaps not well nourished; and in many ways are not hygienically so favorably situated as in times past. Thirty or forty years ago, tubercular disease was rare among them; now, each year it becomes more common."

Dr. W. T. Lucas of Santa Maria writes: "We have more or less of phthisis all the time. But outside of the poorer class of *native* (Spanish) population, none to speak of except among those coming in from other localities." And in a foot-note he says: "Outside of a tendency to lung trouble I regard this a very healthy valley. Those who have a tendency to phthisis do not do well here."

Dr. J. Will Graham of Los Alamos reports: "Phthisis pulmonalis prevails here to a considerable extent, especially among the Californians" (Spanish). In a foot-note he writes: "You will notice that respiratory troubles are ahead of all other diseases; that is owing to the sudden and frequent changes of temperature in this valley."

Dr. R. E. Curran, San Buenaventura, reports: "Phthisis pulmonalis is common among natives (Spanish). Americans mostly imported."

Dr. R. W. Hill of the same place writes: "Phthisis is increasing among the native Californians, due to insufficient and improper diet and clothing, and poorly ventilated dwellings."

Dr. Ira Perry, late of Nordhoff, writes: "Only one case of phthisis known to originate in this valley (Ojai) in five years. A girl of eighteen

nursed her mother who died of the disease, and then continued to live in the same house until her own death from the same cause, a year or more subsequently. I think about one half of the deaths here during the last five years were from phthisis pulmonalis—come from abroad. This is a resort for consumptives, many of whom die, as they will anywhere when setting at defiance the laws of hygiene with reference to food, air, and exercise. As a rule the rich and lazy die; while nearly all who go to work improve."

Dr. W. L. Brown of Downey City writes: "I have seen many cases, but none that have originated here: nearly all, cases that have come here as a last hope."

Dr. J. S. Griffin of Los Angeles writes: "Phthisis pulmonalis, formerly very rare among native Californians (Spanish), is more frequent during the past few years. Imported cases are numerous."

Dr. J. P. Widney, Los Angeles, reports: "This disease among the Spanish has been rare, but it is growing more frequent as they mingle with Americans. Still in the native born population it is not so frequent as in the East and in Europe. Imported cases are very numerous."

Dr. J. H. Bullard of Anaheim writes: "Phthisis pulmonalis is occasionally usually introduced. Not rare among white-Spanish offspring."

Dr. J. A. Crane, Santa Ana: "Have seen three or four cases which it is said originated here, and pursuing a rapid course ended fatally in a few months."

Dr. C. W. Brown, Pomona: "Most frequent cause of death here, but in immigrants almost wholly. Some cases in Mexicans."

Dr. John C. Kerr, Pasadena: "This is more frequent than any other disease; but almost all cases come from the East. I have seen several cases of local origin, but they were among Spaniards, and were catarrhal in form."

Dr. C. M. Fenn, San Diego: "Like the poor always with us; but it comes chiefly from abroad. White Americans seldom if ever contract it here." In a foot-note he writes: "While phthisis not infrequently carries off the native Mexicans and Indian races, I cannot recall a single case of a white person contracting the disease here."

The remarkable uniformity of these independent reports in regard to the introduction and rapid extension of phthisis pulmonalis, among the Spanish natives, demands at least a passing notice; especially when taking into consideration the rarity of its origination among the Anglo-Americans.

With the general absence of the accepted climatic factors conducive to the development of phthisis, the physical conditions above enumerated by Dr. Bates more particularly, must be recognized as the remote cause of the race deterioration in this specific direction. It is not probable that the downward tendency having been once positively determined, any arrest may be expected.

The rapid increase of the white races has steadily placed the Spanish at sad disadvantage. Here as everywhere the rich become richer and the poor become poorer; and with the inevitable attendant evils of an impoverished condition, the near future will probably witness the extinction of these earlier occupants of this sunny southwestern shore, and phthisis will have not a little to do with the finale. But the pendulum, with an uniform propellant force behind it, must swing in an uniform arc. In-door residence, light houses whether of adobe (mud) or wood, abandonment of walking and horseback exercise, must eventually do for the rich American what similar conduct is effecting for the poor Spaniard.

The question of extension by contagion has not been broached by the

reporters, except in the inferential case at Nordhoff recorded by Dr. Perry. During the period covered by this report, three well authenticated cases have been brought to my knowledge by a careful, conservative, medical observer of Los Angeles. If the bacillus tuberculosis be accepted as the proximate cause, and the adoption of insanitary modes of life the remote, there remains no adequate barrier to the wide extension of phthisis here as elsewhere. The mildness of our climate attracts the feeble of all lands, and of these multitudes, cases of phthisis probably preponderate in the proportion of ten to one. As has been demonstrated, the joint occupancy of bed or room by the consumptive and the well, acts unfavorably upon the latter; and in many instances is followed by health failure and early death from phthisis.

Whether a "*propter*" from this "*post*" may be argued or not, satisfactorily to all, the oft observed fact remains. One of the most frequent occurrences throughout this region is this insanitary intimacy. Whether believers or not in the bacillus as a potential factor in the propagation of this, the greatest enemy of the human race, medical men everywhere owe it to the well, to protect them, so far as may be, from the almost inevitable evil resulting from such unfortunate association.

If the bacillus theory be true, the great danger to the general public lies in the myriads of these microbes which are daily deposited on every thoroughfare in the sputa of the suffering multitudes. Cultivators assert that the most virulent form of tubercular sputum is the dried and pulverized. Thus, the sunshine and the breeze, health giving and invigorating to the sick, may become the agents of destruction to the well. No needless alarm is proposed by these remarks, but in the interest of preventive medicine—the *medicine of the future*—the attention of sanitarians is urged with emphasis to this important subject.

The existence of the various cardiac affections is almost unknown except in the case of strangers.

Dr. Bates, Santa Barbara, writes: "Acute diseases of the heart are rare; chronic more common. Many strangers come here suffering from valvular disease."

Santa Maria and San Buenaventura may, to some degree, be considered as exceptions.

Dr. Lucas, representing the former, writes: "It seems to me, for a pastoral and farming community, we have considerable heart trouble here. Of course many cases come in from other places seeking relief."

Dr. Hill, of San Buenaventura, reports: "Rheumatic pericarditis is the most frequent form of heart trouble encountered with us. Valvular disease is quite common among our pioneers who underwent unusual fatigue and exposure."

Dr. Whaley, of Compton, writes: "Of organic diseases of the heart we have none; functional disturbances occur occasionally."

Dr. W. A. Brown, of Downey, says: "We often meet cases of valvular insufficiency newly arrived from the Western States: have met but two cases originating here."

In regard to hepatic affections, the general report is, "rare, except imported." Some few exceptions are noted.

Dr. Lucas, of Santa Maria, writes: "We have no diseases of the liver, except cirrhosis, due to the use of intoxicants."

Dr. Curran, of San Buenaventura, reports: "Hepatic congestion frequent; but no more so than is customary in warm climates."

Dr. Hill, of the same place, says: "Diseases of the liver are to be met with, due most frequently to the abuse of food and dram drinking."

Dr. Weldon, of San Pedro, writes: "Diseases of the liver plenty, from drinking." And in a foot-note adds: "There is a great deal of liquor drank here, and in consequence we have a great many rum stomachs and gin livers to patch up."

Dr. Griffin, of Los Angeles, remarks: "Diseases of the liver are rare, except from alcoholism or other excess."

Dr. C. W. Brown of Pomona, reports: "Diseases of the liver, I judge, are as common here as in the East. Much is brought from malarious localities."

Dr. Kerr, of Pasadena, writes: "Inactivity of the liver common here."

Dr. Crane, of Santa Ana, says: "Functional derangements of the liver not infrequent; organic, rare."

Dr. Fox, of San Bernardino, reports: "Some cases of cirrhosis. Functional disturbance not uncommon. Organic lesion, except from intemperance, rare."

Nephritis idiopathic, another terror of the United States, north and east of the mountains, is not established here as one of the prevailing diseases. We note the comments of those reporting it.

Dr. Bates, Santa Barbara, reports: "A few cases occur each year, usually caused by exposure to rain during the Winter, or to a long ride in a cold wind."

Dr. Lucas, Santa Maria, remarks: "We have a case now and then, generally due to exposure."

Dr. R. W. Hill, San Buenaventura, writes: "Acute nephritis often met with, caused by exposure, over-exertion, mental and physical. Intemperance a frequent cause."

Dr. J. C. Kerr, Pasadena: "A case now and then, caused by drinking."

The ordinary contagious affections are almost as infrequent as the non-contagious. But one especially noteworthy feature has been mentioned by reporters, viz., the general mildness of the attacks, and the absence of serious sequelæ.

Under the caption "miscellaneous," tania alone is even occasional. From my own observation I am able to report its presence as by no means infrequent; but I am very sure it is far from being as common as the charlatans would have their patients believe. Indeed it has been reported that not a few specimens, said to have been removed from willing victims, proved to be celluloid.

From the foregoing it may be correctly inferred, that whatever may be the commercial importance of Southern California, or its future as the center of the great industries which are even now developing in our midst, its excellence as a health resort cannot be exaggerated.

"Within a circle of one hundred and fifty miles, one may find spots below the sea-level, or with an elevation ten thousand feet above it: spots that have nightly a heavy fog, and spots that never know the presence of a fog: places swept by an almost constant breeze, and others sheltered from all wind: the odors and gases from asphaltum and petroleum springs, or the air of the mountain pineries: the scent of the orange blossom, or the balsamic odor of the plants of the desert. Differences of elevation which elsewhere one travels a thousand miles to find, here are found in a radius of fifty miles."

No epidemic has ever visited this part of the State, and contagious diseases which have been brought here have never obtained a foothold. It is moreover a region of easy access by rail and steamer. Food of every variety is abundant, and all of the delicacies and comforts required by invalids are readily found.

